

CLAIMS

That which is claimed is:

1. A medical device comprising:

an expandable stent including a skeletal tubular member having a plurality of cells
5 formed by a plurality of interconnected strut members, said expandable stent also having
proximal and distal ends;

a bridge member which takes the form of an elongated sinusoidal element having
proximal and distal ends, said proximal end of said bridge member coupled to the distal
end of said expandable stent; and,

10 an expandable aneurysm cover formed of a shape-memory sheet, said aneurysm
cover coupled to the distal end of said bridge member so that upon deployment said
aneurysm cover assumes a generally planar configuration.

2. A medical device as defined in Claim 1, wherein said aneurysm cover takes the
15 form of a shape-memory sheet folded to form a plurality of pleats so that said aneurysm
cover may be contracted to facilitate the delivery of said medical device and upon
deployment assumes a generally planar configuration to cover an aneurysm.

3. A medical device as defined in Claim 2, wherein said aneurysm cover is formed
20 from a polymer.

4. A medical device as defined in Claim 3, wherein said aneurysm cover is
comprised of caprolactone-(poly) lactic acid.

5. A medical device as defined in Claim 3, wherein said aneurysm cover is comprised of polyurethane.

5 6. A medical device as defined in Claim 2, wherein said aneurysm cover is coated with an anti-spasmodic drug.

7. A medical device as defined in Claim 2, wherein said aneurysm cover is coated with a drug which inhibits restenosis of a blood vessel.

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8. A medical device comprised of:

an expandable stent which takes the form of a hollow tubular member having proximal and distal portions and a longitudinal axis;

a first bridge member which takes the form of a sinusoidal element having proximal and distal ends, said proximal end of said first bridge member coupled to and extending distally from the distal portion of said expandable stent in a direction substantially parallel to the longitudinal axis of said expandable stent;

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a second bridge member which takes the form of a sinusoidal element having proximal and distal ends, said proximal end of said second bridge member coupled to and extending distally from the distal portion of said expandable stent in a direction substantially parallel to the longitudinal axis of said expandable stent;

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a first self-expanding aneurysm cover formed of a shape-memory sheet initially folded along a plurality of pleats, said first aneurysm cover coupled to and extending

from the distal end of said first bridge member and upon expansion becoming planar and lying in a plane substantially perpendicular to the longitudinal axis of said expandable stent; and,

a second self-expanding aneurysm cover formed of a shape-memory sheet

5 initially folded along a plurality of pleats, said second aneurysm cover coupled to and extending from the distal end of said second bridge member and upon expansion becoming planar and lying in a plane substantially perpendicular to the longitudinal axis of said expandable stent.

10 9. A medical device as defined in Claim 8, wherein said first and second aneurysm covers include first and second planar surfaces, and the first surface of said first aneurysm cover is in planar contact with the second surface of said second aneurysm cover upon expansion of said first and second aneurysm covers.

15 10. A medical device as defined in Claim 9, wherein said aneurysm covers are formed from a polymer.

11. A medical device as defined in Claim 10, wherein said aneurysm covers are comprised of caprolactone-(poly) lactic acid.

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12. A medical device as defined in Claim 10, wherein said aneurysm covers are comprised of polyurethane.

13. A medical device as defined in Claim 10, wherein said aneurysm covers are coated with an anti-spasmodic drug.

14. A medical device as defined in Claim 10, wherein said aneurysm covers are coated with a drug which inhibits restenosis of a blood vessel.

15. A medical device comprised of:

an anchor member comprising an expandable hollow tubular body having proximal and distal ends;

a bridge member which takes the form of an elongated wire having proximal and distal ends, said bridge member coupled to and extending from the distal end of said anchor member; and,

an aneurysm cover which takes the form of an expandable structure extending from the distal end of said bridge member so that upon expansion said aneurysm cover

assumes a generally planar configuration.

16. A medical device as defined in Claim 15, wherein said aneurysm cover is comprised of a shape-memory polymer initially folded along a plurality of pleats and upon expansion assumes a generally planar configuration.

17. A medical device as defined in Claim 16, wherein said aneurysm cover is comprised of caprolactone-(poly) lactic acid.

18. A medical device comprised of:

an anchor member which takes the form of an expandable hollow tubular member;

5 a bridge member which takes the form of an elongated wire having proximal and distal ends, said proximal end of said bridge member coupled to and extending from said anchor member; and,

a blood flow diverter comprising a folded sheet formed of a polymeric material, said diverter coupled to and extending from the distal end of said bridge member for, upon expansion assuming a generally planar configuration for limiting blood flow to an
10 aneurysm.

19. A medical device as defined in Claim 18, wherein said blood flow diverter is comprised of shape-memory polymer material.